

Stromberg-Carlson Micromation Systems



A family of compatible equipment that can cut turn-around time and lower the cost of turning digital data into readable language!

As the role of the computer has grown, so have the problems of dealing efficiently with the information it generates. The problem has been two-fold: how to get digital data into readable language — fast enough and at a low enough cost to be really practical.

Micromation takes a big step forward toward a solution that lets you take full advantage of your computer. For the first time, Micromation provides a full system of compatible components which are designed to cut turn-around time and lower the costs of converting computer output into readable information.

In a very real sense, Micromation can take the chains off your computer—and free it to go at its own pace. The 600 to 1200 line rate of the mechanical printer which has controlled the production of readable information no longer needs to inhibit data processing. For the first time, you can translate computer codes into useful text at computer speeds—get a copy of that text nearly as fast—and get it to the people who need it through low-cost inquiry stations.

The key element in the Micromation System that makes this possible is a development pioneered by Stromberg-Carlson, the Micromation Recorder. Practically speaking, the S-C Recorder is a system-within-a-system. This single component turns the computer's outpouring of digital data into human language and converts it instantly to computerized microfilm—or hard

copy. It does so economically and at a pace that gives you access to the information immediately. One basic component handles the work which has previously required several pieces of equipment and a number of costly intermediate operations. Here's how it works.

The Micromation Recorder accepts the output of the newest high speed computers and translates it instantly to standard alphanumeric characters. Translation is handled by S-C's own advanced cathode ray tube—the CHARACTRON® Shaped Beam Tube. Readable information is generated by passing an electron beam through characters etched on a miniature matrix placed in front of an electron gun. A stroke generation system creates special characters and graphics by joining short line segments under computer control. The CHARACTRON tube produces an image of exceptionally good resolution and high quality which is displayed on the tube face.

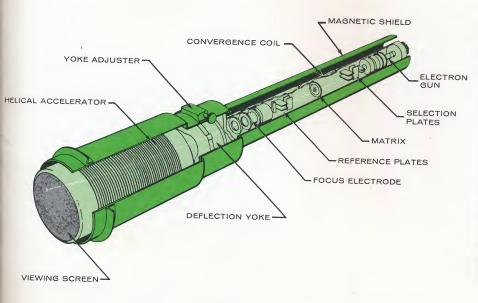
The text or graphics displayed on the tube face are then automatically converted to S-C's own computerized microfilm. The Recorder produces 16mm roll film, optionally produces 35mm film for aperture cards, or microfiche. These can be simultaneously coded for use with

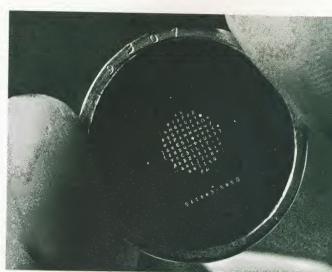


the newest storage and retrieval systems. To save computer time, a special projector can be used to superimpose standard business forms over the text. The microfilm can include all useful information—text, codes and forms. Options produce hard copies of highest quality.

That's the basic Micromation Recorder — cornerstone of the Micromation System. Feed it digital data from the computer or tape transports—it delivers text or graphic translations in the useful form of microfilm—or paper. It does so at rates as high as 70,000 pages in 8 hours—and at costs that mean thousands of dollars worth of savings.

The full Micromation System offers remarkable flexibility, versatility and convenience, because it can be tailored specifically for the job. Not everyone needs every feature, but everyone who deals with large volumes of computer-generated data needs the system. Micromation Systems offer everything you need from four basic Recorders to low-cost inquiry stations—including film duplicators, reader-printers, and production paper printers. Check the next page for a full list of Micromation components and start planning your system now.







S-C 4060 PLOTTER PRINTER



Converts computer output into precise scientific and engineering graphics and alphanumerics; records output on film or optional paper

Designed to user requirements, the S-C 4060 is today's most powerful and versatile computer recording system. Working on-line with new generation computers or multiple tape transports, the S-C 4060 translates digital codes into alphanumerics at computer speeds.

Also produces ultra-high resolution plotting of points, vectors, curves, Boolean diagrams, global maps, PERT charts, and even frames for animated films. Records data automatically on 16mm or 35 mm microfilm on-line or produces optional paper copy.

S-C 4060 CHARACTERISTICS

GENERAL CHARACTERISTICS:

Compatible With: Third generation computers such as Spectra 70, IBM 360, GE-635, etc.

Operation: Accepts input from variety of sources, generates alphanumerics or line graphics and produces microfilm or optional on-line hardcopy.

Speed: 90,000 characters or more per second.

Plot Format: 4096×3072 equal increment addressable units variable under program control.

Input: Accepts and processes 7 or 9 track tape data, on-line computer data, accepts input from paper tape or cards.

Input Density: Up to 800 bytes per inch from tape.

Output: 16mm or 35mm microfilm, optional on-line hardcopy.

Logic: Integrated circuits, functional boards.

Circuitry: Solid state.

CHARACTER & GRAPHICS GENERATION:

CRT Tube: 7" high resolution CHARACTRON® character generating tube with 96 character matrix plus optional stroke character generator.

Character Set: ASCII, Standard Binary, Extended Binary. Offers upper and lower case letters, 10 numerics and 34 special symbols programmable in four different sizes and two orientations to produce images of highest quality and variety.

Plotting: Generates plots over a 4096 × 3072 equal increment, addressable point raster.

Spot Sizes: 2, 4, 8 and 16 addressable points.

Plot Modes: Plot random mode requires 40 microseconds. Plot sequential (change of 80 raster positions maximum) requires 10 microseconds.

Line Generation: Four weights. Minimum line weight equals two addressable points. Solid or dashed lines. Maximum line length at minimum weight requires less than one millisecond.

Forms Overlay: Superimposes forms on generated image under program control.

Forms Resolution: Line weights as small as .010 inch may be resolved when form is reproduced in $8\frac{1}{2}$ " × 11" format.

Standard Features:

Programmable input control, line generation, plotting Standard forms projector Rotatable tube mount Horizontal and vertical tabbing ASR-33 teletype printer

Camera:

600 ft. magazines provide 16mm or 35mm microfilm recording on either perforated or non-perforated film.

Options:

On-line film processor
On-line hardcopy printer
Film coding
Stroke generator
Additional core memory
Card reader
Cameras

PRODUCT CONTROL UNIT:

Type: Parallel, binary, solid state, integrated circuits, internally stored program.

Addressing: Single address with indexing and indirect addressing.

Word Length: Sixteen bits.

Machine Code: Two's complement.

Memory: Coincident-current ferrite core. 8192 word modules, expandable to 32,768 words. 1.7 microsecond cycle time.

Speed: Add and subtract, 3.4 microsecond. Multiply, 9.5 microsecond. Divide, 17.9 microsecond.

Input/Output Lines: For transfer between peripheral equipment and 4060 Product Control Unit: single word, single word with priority interrupt; direct multiplexed channel (DMC).

Interrupt: Single standard interrupt line. Optional priority interrupts available in multiples of 8 up to 256 lines.

Software: Graphical and mathematical software routines supplied.

Operating Temperature: 60° to 80°F Weight: Approximately 1800 pounds

Relative Humidity: 40% to 70%

Dimensions:

Display Head — 84" long, 70" high, 32" wide Control Unit — 66" long, 30" high, 32" wide

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Data Products Division, P.O. Box 2449, San Diego, California 92112

Printed in U.S.A. C27/11-66/10M

S-C 4460 DATA RECORDER



For businesses with EDP centers requiring in-house production of graphic reports and charts

For any organization that needs high speed recording of computer output in alphanumerics and also needs frequent production of reports that require graphic presentation of data—such as business charts and graphs.

Translates data from large scale computers or tape transports to alphanumerics at

high speeds and produces annotated graphics. Offers upper and lower case letters, proportionally spaced characters for records of the handsome appearance desirable in management reports or customer copies. Also produces high quality offset masters useful for reports and publications.



S-C 4460 CHARACTERISTICS

Compatible With: Third generation computers such as Spectra 70, IBM 360, GE-635, etc.

Operation: Accepts input from computer or tape transport, generates alphanumerics or graphics and produces microfilm or optional hardcopy.

Speed: Up to 90,000 characters per second.

Print Format: Proportionally spaced characters equivalent to executive typewriter print.

Input: Accepts data on line or from 7 or 9 track tape units.

Input Density: Up to 800 bytes per inch.

Character Generator: 7" CHARACTRON® high resolution character generation tube.

Character Sets: ASCII, Standard Binary, Extended Binary. Both scientific and commercial versions of all three sets available.

Graphics Generation: The 4460 is capable of plotting or printing at any specified position. In conjunction with the form projector it will produce high quality management reports and graphs.

Output: 16mm or 35mm microfilm.

Logic: Integrated circuits, functional boards.

Circuitry: All solid state.

Standard Features:

Proportional spacing, re-read, back-spacing, editing Longitudinal and lateral parity circuitry Standard forms projector Rotatable tube mount Plotting

Camera: 600 ft. split feed take-up magazine, film advance time of 100 milliseconds.

Options:

Multiple Forms Projector Merging camera with 2000 capacity Microfiche Camera Large film camera

Operating Temperatures: 60°F to 85°F

Weight: Approximately 1200 pounds

Relative Humidity: 40% to 70%

Dimensions: 70" high, 84" long, 32" wide

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Data Products Division, P.O. Box 2449, San Diego, California 92112

Printed in U.S.A. C29/11-66/10M

S-C 4440 DATA RECORDER (Aphronic)



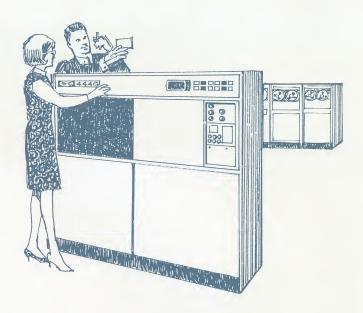
For businesses with large EDP centers making frequent inquiries into large data bases

For any organization that processes data, updates large files or produces files of large quantities of computer documents for micro-film inquiries at up to daily updating intervals. The S-C 4440 produces tremendous savings for the user with large output requirements due to its high speed of up to 90,000 characters per second printing rate and low cost of printing materials. The S-C 4440 can translate computer data into computer format

pages at the rate of 70,000 pages in an eight hour shift. These pages can be simultaneously encoded with special marks for use with modern random information retrieval methods (Miracode, Codeline and image count).

It produces high quality 16 mm roll microfilm encoded with random retrieval information and superimposed business forms.

Major options include a hardcopy printer for producing hardcopy pages from microfilm.



S-C 4440 CHARACTERISTICS

Compatible with: IBM 2401-Mod. 1 Tape Units.

Operation: Accepts input from computer or magnetic tape, generates alphanumeric characters in a computer page format, projects business forms over generated data to produce microfilm images of computer pages with random retrieval film coding. Optionally, hardcopy can be produced from the microfilm.

Speed: Up to 90,000 characters per second.

Input Format: Accepts 7 or 9 track NRZI BCD type recorded tapes.

Input Tape Density: 800, 556 or 200 bytes per inch.

Character Generator: 5" Apsel® CHARACTRON® Shaped Beam tube.

Character Sets: Standard BCD, Business or Scientific Sets.

Print Format: 132 characters per line, 64 lines per page, 10 characters per inch by six lines per inch. Effective reduction ratios to microfilm of 21:1 to 32:1.

Output: 16 mm non-perforated microfilmed pages of computer documents with random access film retrieval marks.

Logic: Solid state standard logic modules.

Standard Features:

Record edit, automatic re-read of tape errors.
Lateral parity checking.
High quality characters.
High accuracy printing.
Horizontal and vertical tabbing.
Rotatable film image.
Built-in viewer.
Business forms projector.
Quick change reduction ratios. (film image sizes)
Variable film advance,

Miracode, 21 bar code line, 26 bar code line or image count film retrieval marks.

Frame counter.

Circuitry: All solid state.

16 mm Camera: 600 ft. split feed and take-up magazines. Film advance time of 100 ms or less, variable film advance of 12 to 18 mm, retrieval exposure system for Miracode, 21 bar code line, 26 bar code line or image count retrieval marks: quick change camera lens, film out, film footage and film motion indicators.

Options:

Multiple Forms Projector Merging Camera Hardcopy Printer

Operating Temperature: 60°F to 85°F.

Weight: Approximately 700 lbs. Relative Humidity: 40% to 70%.

Power: Includes power for S-C 4440 Data Recorder and one tape unit—208V (phase-to-phase) ±10%, 3 phase, 5 wire WYE connected, 60 cycles per second, 1.5 KW for the Data Recorder, 1.5 KW for the tape unit—3.0 KW total.

Dimensions: 57" high, 63" wide, 22" deep.

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S-C 4360 DATA RECORDER



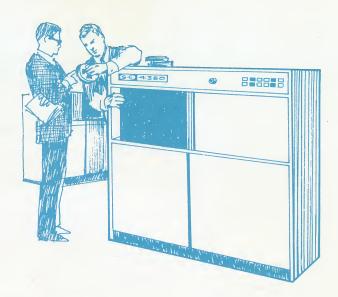
For businesses requiring fast, economical access to a medium size data base

For any business with a small to medium scale EDP center which may process data, update files, or produce files of computer documents for microfilm inquiries at up to daily updating intervals.

The S-C 4360 can handle large peak loads by being able to print computer documents at about five times the speed of a computer line printer. The S-C 4360 translates computer data at the rate of 20,000 pages per eight hour shift.

It produces 16mm roll film compatible with modern microfilm systems. It can simultaneously code pages with image count retrieval marks.

Major options include a microfiche camera for producing 4" × 6" or tab card size microfiche at the rate of 1 to 2 per minute, a line printer simulator for recording computer line printer tapes without reformatting, and a hard copy printer for producing hardcopy pages from microfilm.



S-C 4360 CHARACTERISTICS

Compatible with: IBM 2401-Mod. 1 Tape Units.

Operation: Accepts input from computers or tape, generates alphanumeric characters in a page format, projects a business form, and makes microfilm.

Speed: Up to 30,000 characters per second; 2 pages of text per second.

Input Format: Accepts 7 or 9 track NRZI BCD recorded tapes formatted for the S-C 4360 Data Recorder or (optionally) for the IBM 1401 computer and 1403 printer.

Input Density: 800 or 556 bytes per inch.

Character Generator: 5" Apsel® CHARACTRON® Shaped Beam tube.

Character Sets: Standard BCD, System 360 BCD, BCDIC or extended EBCDIC. Both scientific and commercial versions of all four sets are available. Changing from one set to another is accomplished by an operator plug-in patchboard.

Print Format: 132 characters per line, 64 lines per page, 10 characters per inch, 6 lines per inch. Effective reduction ratios to microfilm 21:1, 24:1, 28:1.

Output: 16mm non-perforated microfilm -105×148.75 microfiche or $3\frac{1}{4}$ " $\times 7\frac{3}{8}$ " microfiche (optional).

Standard Features:

Re-read tape errors
Longitudinal and lateral parity checking circuitry
Standard forms projector
Built-in viewer
Rotatable Film Image
Quick change reduction ratios (film image sizes)
Variable film advance in .588mm steps
Designed for UL fire and safety approval
Image count mark film retrieval coding
Frame counter

Logic: Integrated circuits, functional boards.

Circuitry: All solid state.

16mm Camera: 100 ft. daylight-loading film rolls, film advance time of 400 to 300 ms., variable film advance of 9.4 to 17.6mm, image count retrieval coding, quick change lenses, film out, film footage and film motion indicators.

Options:

Microfiche camera capable of producing continuous roll $105 \times 148.75 \text{mm}$ ($4'' \times 6''$) or $3\frac{1}{4}'' \times 7\frac{3}{8}''$ microfiche to COSATI or NMA formats at a rate of 1 to 2 fiche per minute with sixty or more images per fiche, a title and a cutmark. Titling is placed on the microfiche by computer data.

Cyclic Redundancy Check Correction for 9 track tapes. This feature corrects multiple single-track tape reading errors.

Line Printer Simulator which allows tapes formatted for many computer line printers to be recorded on the S-C 4360 without reformatting the tape.

Operating Temperature: 60°F to 90°F

Weight: 700 pounds

Relative Humidity: 40% to 70%

Power: Includes power for the S-C 4360 Data Recorder and one tape unit — 208V (phase-to-phase) ±10%, 3 phase, 5 wire WYE connected, 60 cycles per second, 1 KW for the data recorder, 1.5 KW for the tape unit, 2.5 KW total.

Dimensions: 66" high, 68" wide, 26" deep

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Micromation Technology

a practical solution to information management

Stromberg-Carlson introduces an important advance—by cutting turn-around time and lowering the cost of turning computer data into readable language!

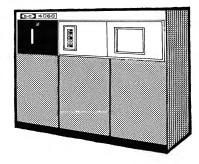
Would you like to turn a reel of magnetic tape into its equivalent in readable language — at computer speeds of 90,000 cps — and for a fraction of what you now pay? That's Micromation, a new approach to the two big problems in information management — high cost and slow turn-around. Now, for the first time, your computer is released from the 600-1200 line print rate of peripheral mechanical translators — free to go at its own pace!

Stromberg-Carlson now introduces an entire family of compatible equipment that turns computer output into readable text at electronic speeds and makes it readily available to anyone who uses it. The full Micromation system offers everything needed to convert digital data to S-C's own computerized microfilm — or paper — and display it on low-cost inquiry stations. No costly communications installations needed, either. Investigate Micromation — see if it doesn't let you break through to substantial savings.

Stromberg-Carlson

Data Products Division, P.O. Box 2449, San Diego, California 92112

S-C 4060 Micromation Plotter-Printer for precise scientific and engineering graphics



Instantly translates computer codes to line graphics or alphanumerics and records results on film or optional paper copy. Works on-line with newest computers or from multiple tape transports, accepts input from ASR 33, punch-card, paper tape. SCORES II (S-C output recording subroutines) software support package generates computer

graphics. 4
sizes of alphanumerics
permit the
production of
highest quality reports
and publica-

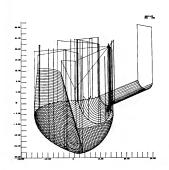
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tions. Offers ultra-high resolution plotting of points, vectors, characters, curves, diagrams

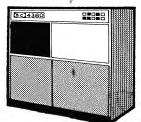
representing Boolean equations, global maps, PERT — even frames for a nimated



films. Presents data in visual form on optional display monitor. Typical System, leasing monthly at \$8,085*



A whole family of Micromation Recorders for every business need



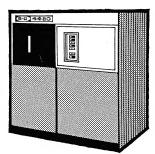
S-C 4360 Recorder

Translates data from computer or tape to readable text at rates of 30,000 characters per second, produces microfilm at rates of 20,000 pages in 8 hours. Typical System, leasing monthly at \$1,950*



S-C 4440 Recorder

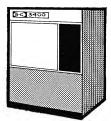
Translates computer or tape data at 90,000 character print rate, microfilms at rate of 70,000 pages in 8 hours. Can generate multiple business forms; simultaneously codes film for fast retrieval. Typical System, leasing monthly at \$3,950*



S-C 4460 Recorder

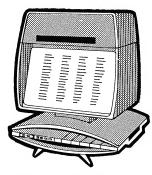
Translates from computer or tape at 90,000 characters per second and microfilms 70,000 pages in 8 hours. 96 character matrix, 4 type sizes, variable spacing. Can plot business graphics like charts, PERT. Typical System, leasing monthly at \$5,000*

Micromation Printers designed specifically for Micromation systems



S-C 3400 Production Hard Copy Printer

Produces paper copies of master-copy quality from roll film at the rate of one $11'' \times 14''$ page per second.



S-C 3500 Demand Printer-Reader

Presents computer data in full page format and produces a clear, sharp paper copy on demand. Desk-top size, handsome executive styling.

Inquiry Stations Micromation-designed for fast access to data



S-C 1700 Executive Inquiry Station

Offers 3 interchangeable display screens of different sizes. Displays page or record format up to 11" x 14" size. Executive design, speedy access.



S-C 1325 Microfiche Inquiry Station

Displays any one of the 72 texts recorded on a $4'' \times 6''$ microfiche on a $11'' \times 14''$ viewing screen. x-y selection gives fast access to any record.

Kalvar Dry Process Duplication Equipment and Film

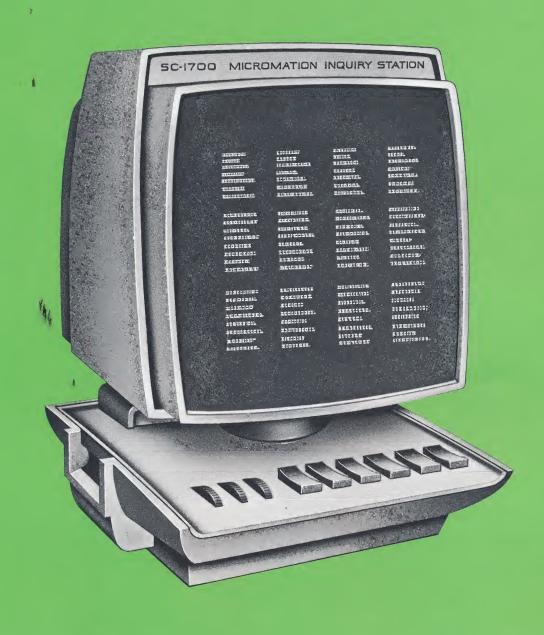
for roll film or microficheare an integral part ofS-C Micromation systems.



Keynote Option for Business Micromation Recorders:

Microfiche Camera: Permits automatic generation of titled microfiche at high speeds, without stripping. Produces $4'' \times 6''$ 72-image fiche at rate of 5 fiche per minute.

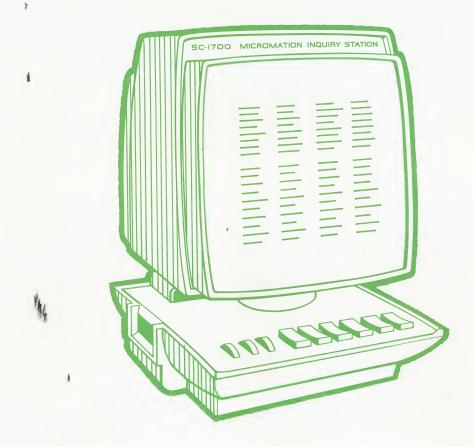
S-C 1700 INQUIRY STATION



Compact executive-styled unit for businesses requiring fast individualized access to data recorded on microfilm

Micromation-designed, the S-C 1700 Inquiry Station permits maximum flexibility in planning an inquiry system that is efficient, functional and economical. Offers three interchangeable display heads with screens of different sizes which may be changed by the

operator. A unique optional control system makes it possible to advance or reverse frames or lines, giving the operator sure control. The S-C 1700 permits access to one item out of a million in just seconds, offers handsome executive styling.



S-C 1700 CHARACTERISTICS

Accepts: S-C Magazines (16 mm - 100'), compatible

with other cartridges

Loading: Automatic side loading

Film Transport: Variable Speed, 15 sec. rewind

Screen: Features interchangeable modular display heads, with screens of different sizes, which may be changed by the operator. Screens are offered in such

practical sizes as 11" x 5" and 13" x 10"

Screen Color: Green, Blue or Grey

Magnification: 19X or 22X

Image Rotation: 90°

Illumination: Quartz-iodine lamp with didroic reflector

and heat filter

Power Requirements: 115 VAC 60 cycles per second.

Dimensions: 15" wide, 14" deep, height depends on

screen size

Options:

Screen Brightness Control

Color Filters

Incremental line advance (bidirectional) Programmed incremental rate (bidirectional)

Frame advance (bidirectional)

Programmed frame rate (bidirectional)

Controls:

On-off-intensity

Image shift

Focus

Set

Reset

Controls for optional line or frame advance or reverse,

preset or programmed.

10-digit switches to set frame advance distance



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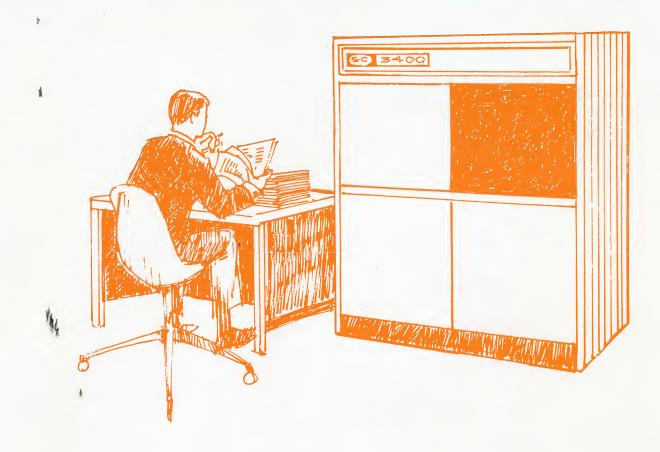
S-C 3400 HARD COPY PRINTER



Produces single or multiple paper copies of high quality from microfilm output of S-C Recorders

The S-C 3400 is Micromation-designed to produce the necessary paper copies of any data recorded on microfilm by S-C Recorders. Completely self-contained, it generates highly legible paper copies at the rate of 60 ft. per minute. Synchronous processing produces the

documents at the point of output in less than 30 seconds after exposure. The number of copies, single or multiple, is operator selected. The speed, flexibility and high quality of the copies produced make the S-C 3400 particularly useful wherever the demand for copies is high.



S-C 3400 CHARACTERISTICS

Hard Copy Output: Finished paper bearing an electrostatically formed image, permanently set and suitable for further processing.

Film Input: Non-sprocketed 16 mm microfilm.

Paper Input: Paper input may be in rolled form or fanfolded configuration; a range of paper format widths may be used in the S-C 3400.

Processing: Synchronous processing produces copies at the point of output in less than 30 seconds after exposure.

Processing Rate: Hard copy may be generated at the rate of 60 ft. per minute based on synchronous operation.

Paper Output: May be rolled, stacked or refolded where fanfolding format is used.

Operator Control: Single or multicopy output may be selected by operator.

Finished Copy: Since each copy, single or in multiples, is generated from the microfilm image, each one has

uniform quality and readability. Since business forms may be superimposed over data in the recording process, finished copies may carry forms as well as computer-generated data.

Power: Operates from 208 or 230 VAC, single phase, 60 cycle $\pm 1\frac{1}{2}$ cps or 208 VAC, 3 phase 60 cycle $\pm \frac{1}{2}$ cps. Requires approximately 3000 watts input power.

Operating Temperature: 60°F to 90°F.

Relative Humidity: 20% to 80%.

Dimensions: 66" high, 66" wide, 28" deep.



Data Products Division, P.O. Box 2449, San Diego, California 92112

Printed in U.S.A. C31/11-66/10M

A complete family of Micromation-Designed equipment to handle every business need

Four Micromation Recorders (see the accompanying sheets for detailed specifications)

S-C 4060 Plotter-Printer for generating precise scientific and engineering graphics

S-C 4360 Recorder for inquiry into a small data base.

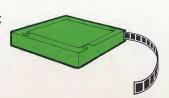
S-C 4440 Recorder for frequent inquiry into a lårge to medium data base.

S-C 4460 Recorder for producing high quality printing and charts for management reports.

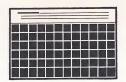
A choice of film output that suits the needs of your specific application:

S-C Microfilm is automatically generated in 16mm roll film for cartridge storage, or optionally in 35mm, suitable for aperture cards. Film can be simultaneously coded for image or line count, Kodamatic, Miracode—even special codes.

Microfiche: S-C's key option, the Microfiche Camera, permits the automatic generation of titled microfiche at high speeds without costly, tedious stripping. Produces 4" x 6" 72-image fiche or tab card size at the rate of 1 to 5 fiche per minute.







For fast access to data — Inquiry Stations, Micromation-Designed:

S-C 1700 Micromation Inquiry Station offers three interchangeable display screens of different sizes. Displays page or record. Compact desk-top size, executive styling.

S-C 1325 Microfiche
Inquiry Station displays any one
of the 72 texts recorded on a
4" x 6" microfiche on an
11" x 14" viewing screen.
Convenient x-y selection
provides fast access.





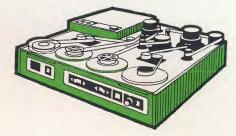
Micromation Printers, designed specially for use with Micromation Systems:

S-C 3400 Production Hard Copy Printer produces paper copies of master-copy quality from roll film at the rate of one 11" x 14" page per second. Since film image may carry standard business forms superimposed over data, forms inventory may be reduced.

S-C 3500 Demand Printer-Reader presents computer data in full page format on daylight viewing screen, then produces a clear, sharp paper copy on demand. Compact executive styling.







An integral part of Micromation Systems — Kalvar Dry-Process Reproducers and Film:

Kalvar Multimode Reproducers provide a compact all-inone unit for the printing and processing of 16mm or 35mm microfilm duplicates. Dry process uses heat only; no chemicals required. Multimode options permits direct reproduction of negatives or positives, negatives to positives, or positives to negatives. Choice of models with variable speeds, ranging from 5 to 185 ft. per minute. Film requires no dark room; is sensitive to ultra-violet light only. Scratch-resistant thermoplastic emulsion on polyester base has 5-year shelf life.

UAIDE, the society for Users of Automatic Information Display Equipment, is the only international society holding regular meetings to explore design improvements and techniques for use of such equipment. S-C equipment incorporates most of the society's recommendations.

For additional information on Micromation Systems Components write to:

Stromberg-Carlson

Data Products Division, P.O. Box 2449, San Diego, California 92112 Phone (714) 298-8331

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